

be transferred to a PVDF membrane and subjected to micro sequencing to determine the amino acid sequence of the N-terminal of the fragments.--

Please replace the paragraph beginning at page 29, line 5, with the following rewritten paragraph:

--One of the full length Npm2 cDNAs (clone 236-1) was used to screen a mouse 129SvEv genomic library (Stratagene) to identify the mouse Npm2 gene. 500,000 phage were screened and 12 positive were identified. Two of these overlapping phage clones, 236-13 and 236-14 (~37 kb of total genomic sequence), were used to determine the structure of the mouse Npm2 gene. The mouse Npm2 is encoded by 9 exons and spans ~6.6 kb (Figures 12 and 13A and 13B (SEQ ID NO: 7-14)). Two moderate size introns (introns 4 and 5) contribute the majority of the gene size. The initiation ATG codon resides in exon 2 and the termination codon in exon 9. The splice donor and acceptor sites (Figures 13A and 13B (SEQ ID NO: 7-14)) match well with the consensus sequences found in rodents, and all of the intron-exon boundaries conform to the "GT-AG" rule (Senapathy et al. Methods Enzymol 183:252-278 (1990)). A consensus polyadenylation signal sequence (AATAAA) is found upstream of the polyA tracts which are present in the two isolated cDNAs (Figures 13A and 13B (SEQ ID NO: 7-14)).--

In the claims:

Please amend claim 1 as follows:

1. (Amended) Substantially pure O1-180 having the amino acid sequence set forth in Fig. 2 (SEQ ID NO: 2).

Please amend claim 2 as follows:

2. (Amended) An isolated polynucleotide having the polynucleotide sequence set forth in Fig. 1 (SEQ ID NO: 1).

Please amend claim 11 as follows:

11. (Amended) Substantially pure O1-184 having the amino acid sequence set forth in Fig. 4 (SEQ ID NO: 4).

Please amend claim 12 as follows:

12. (Amended) An isolated polynucleotide having the polynucleotide sequence set forth in Fig. 3 (SEQ ID NO: 3).

Please amend claim 21 as follows:

21. (Amended) Substantially pure O1-236 having the amino acid sequence set forth in Fig. 6 (SEQ ID NO: 6).

Please amend claim 22 as follows:

22. (Amended) An isolated polynucleotide having the polynucleotide sequence set forth in Fig. 5 (SEQ ID NO: 5).

Please amend claim 31 as follows:

31. (Amended) An antisense polypeptide encoded by a polynucleotide having a nucleotide sequence complimentary to the polynucleotide sequence set forth in Fig. 1 (SEQ ID NO: 1).

Please amend claim 32 as follows:

32. (Amended) An antisense polypeptide encoded by a polynucleotide having a nucleotide sequence complimentary to the polynucleotide sequence set forth in Fig. 3 (SEQ ID NO: 3).

Please amend claim 33 as follows:

33. (Amended) An antisense polypeptide encoded by a polynucleotide having a nucleotide sequence complimentary to the polynucleotide sequence set forth in Fig. 5 (SEQ ID NO: 5).

Please add the following claims:

34. A transgenic mouse comprising a disruption of its genome in the O1-236 (Npm2) gene.

35. The transgenic mouse of claim 34 wherein said disruption is a heterozygous disruption.

36. The transgenic mouse of claim 34 wherein said disruption is a homozygous disruption.

37. The transgenic mouse of claim 34 wherein said disruption alters the fertility of a female transgenic mouse.

38. The method of making a transgenic mouse comprising a disruption of its genome in the O1-236 (Npm2) gene, comprising the steps of:

- (a) introducing an O1-236 (Npm2) targeting vector into a mouse embryonic stem cell;
- (b) selecting for the mutation of the O1-236 (Npm2) gene in embryonic stem cells;
- (c) introducing said mouse embryonic stem cells with the mutation of the O1-236 (Npm2) gene into a mouse blastocyst;
- (d) transplanting said mouse blastocyst into a pseudopregnant mouse;
- (e) allowing said transplanted mouse blastocyst to develop to term; and
- (f) identifying a transgenic mouse comprising a disruption of its genome in the O1-236 (Npm2) gene in at least one allele.

39. The method of claim 38 further comprising the step of breeding two transgenic mice to obtain a transgenic mouse comprising a homozygous disruption of its genome of the O1-236 (Npm2) gene.

40. The method of claim 39 wherein said disruption alters the fertility of a female transgenic mouse.

41. A transgenic mouse comprising a disruption of its genome in the O1-180 gene.
42. The transgenic mouse of claim 41 wherein said disruption is a heterozygous disruption.
43. The transgenic mouse of claim 41 wherein said disruption is a homozygous disruption.
44. The transgenic mouse of claim 41 wherein said disruption alters the fertility of a female transgenic mouse.
45. The method of making a transgenic mouse comprising a disruption of its genome in the O1-180 gene, comprising the steps of:
- (a) introducing an O1-180 targeting vector into a mouse embryonic stem cell;
 - (b) selecting for the mutation of the O1-180 gene in embryonic stem cells;
 - (c) introducing said mouse embryonic stem cells with the mutation of the O1-180 gene into a mouse blastocyst;
 - (d) transplanting said mouse blastocyst into a pseudopregnant mouse;
 - (e) allowing said transplanted mouse blastocyst to develop to term; and
 - (f) identifying a transgenic mouse comprising a disruption of its genome in the O1-180 gene in at least one allele.
46. The method of claim 45 further comprising the step of breeding two transgenic mice to obtain a transgenic mouse comprising a homozygous disruption of its genome of the O1-180 gene.
47. The method of claim 46 wherein said disruption alters the fertility of a female transgenic mouse.
48. A transgenic mouse comprising a disruption of its genome in the O1-184 gene.
49. The transgenic mouse of claim 48 wherein said disruption is a heterozygous disruption.
50. The transgenic mouse of claim 48 wherein said disruption is a homozygous disruption.

51. The transgenic mouse of claim 48 wherein said disruption alters the fertility of a female transgenic mouse.

52. The method of making a transgenic mouse comprising a disruption of its genome in the O1-184 gene, comprising the steps of:

- (a) introducing an O1-184 targeting vector into a mouse embryonic stem cell;
- (b) selecting for the mutation of the O1-184 gene in embryonic stem cells;
- (c) introducing said mouse embryonic stem cells with the mutation of the O1-184 gene into a mouse blastocyst;
- (d) transplanting said mouse blastocyst into a pseudopregnant mouse;
- (e) allowing said transplanted mouse blastocyst to develop to term; and
- (f) identifying a transgenic mouse comprising a disruption of its genome in the O1-184 gene in at least one allele.

53. The method of claim 52 further comprising the step of breeding two transgenic mice to obtain a transgenic mouse comprising a homozygous disruption of its genome of the O1-184 gene.

54. The method of claim 53 wherein said disruption alters the fertility of a female transgenic mouse.

55. A transgenic mouse comprising a disruption of its genome in more than one of the O1-236 (Npm2), O1-180 or O1-184 genes.

56. The method of making a transgenic mouse comprising a disruption of its genome in more than one of the O1-236 (Npm2), O1-180 or O1-184 genes, comprising the steps of:

- (a) introducing more than one of the O1-236 (Npm2), O1-180 or O1-184 targeting vectors into a mouse embryonic stem cell;
- (b) selecting for the mutation of the O1-236 (Npm2), O1-180 or O1-184 gene in embryonic stem cells;

- (c) introducing said mouse embryonic stem cells with the mutation of the O1-236 (Npm2), O1-180 or O1-184 gene into a mouse blastocyst;
- (d) transplanting said mouse blastocyst into a pseudopregnant mouse;
- (e) allowing said transplanted mouse blastocyst to develop to term; and
- (f) identifying a transgenic mouse comprising a disruption of its genome in more than one of the O1-236 (Npm2), O1-180 or O1-184 genes in at least one allele.

57. The method of claim 56 further comprising the step of breeding two transgenic mice to obtain a transgenic mouse comprising a homozygous disruption of its genome in more than one of the O1-236 (Npm2), O1-180 or O1-184 genes.